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CASE OF RETENTION OF A PORTION OF THE PLACENTA—FROM  
MY NOTE BOOK.

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Mrs. —, 41, was taken in her fourth labor, November 24, 1861. She was attended by a midwife, and was naturally delivered at 7, A.M., of a son. I was called to see her at 2, P.M., of the same day. I had attended her in her third labor, which was without accident, and learned the following particulars of her history, the recital being prompted by the diseased condition which led to the call. From girlhood Mrs. — was in the habit of rejecting a portion of every meal. She did not vomit it, but it would accumulate in her throat, as for rumination, and be gradually spit up. At times there was great distress in the stomach after eating. This condition has often been present during her whole life, but has never seriously impaired her health. I do not recollect that it was alluded to in the labor in which I attended her.

In the seventh month of her present pregnancy, the stomach trouble declared itself in an unusually severe form. She could not bear any amount of food on her stomach, and while it was retained, her distress was extreme. It had no resemblance to that state of stomach which attends on early pregnancy, nor on that which sometimes occurs at the close of that function. It was accompanied by great suffering. One symptom was especially referred to. This was intense heat in the organ. So great was this, that at times she drank, in a night, nearly or quite two quarts of cold water. When first swallowed or while cold, there was comfort, but as it grew warm this disappeared and the water was violently thrown up. She did not perceptibly lose strength or flesh, and but for the long continuance of this disturbance, it might have been regarded only as a modification of the sympathetic stomach difficulty which occurs in the last months of pregnancy, and at times with such severity as to render premature delivery necessary to save life. At times there was

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more or less embarrassment of respiration during the attacks. The bowels had not been much disturbed.

It was said above that labor was over at 7, A.M. It was but an hour long. The afterbirth was adherent, and the midwife took it away, as she said. Some hæmorrhage attended, and followed, the operation, but was not deemed of sufficient amount to detain the attendant for more than an hour, she leaving at 8, A.M. Mrs. — had another professional engagement, if such it could be called. Her next attendant was a *Botanic*, who brought two bottles, with printed labels, one labelled *liniment—external, internal, and a powder*. One label was partly scratched off; but a part of the written directions was, “teaspoonful *swallowed*.” Mrs. — took one dose, but such was the intenseness of heat which it produced in the mouth, and the racking pain in the stomach till she vomited it, that she declined taking a second dose. An homœopath was next called. The three tumblers, No. 1, No. 2, No. 3, were duly arranged on the table, with a teaspoon in each, lest disturbance of therapeutic effects might be produced by using the same spoon. Mrs. — took Nos. 1, 2, 3, till she was tired, getting not the least relief from the *potency*; and I was desired to see her, and at once, as it was feared she would die before my arrival, if it were delayed.

I found her in great distress. Her breathing was short—as if the air, having reached a certain point, could get no farther. Violent attempts were made at eructation; and from the stomach, black masses like blood were thrown in the vomitings. I asked about this, and was told that in the four days previous to labor the appearance of the matters vomited resembled these now ejected. Upon examination of the abdomen, pressure could not be borne at the epigastrium, and this was found to be the case by carrying the pressure to the left hypochondrium—the right was not disturbed by pressure. The uterine tumor was very large, considering that it was now eight hours since delivery. I felt for the pulse, but found none, either in the right or left wrist. I asked if she had flowed much. “Yes,” was the answer, “excessively,” and flowing still continued. The napkins removed showed this. She was flowing when the attendant left.\* Notwithstanding all this, the color of the lips and the warmth of the skin were perfectly natural. The strength seemed good. There was no sighing, but a very striking dyspnœa. The voice was clear, and the manner not at all depressed. The womb was examined. Coagula were removed, and the os uteri felt. It was closed, during this operation, and was high up, very firm, and too tender to tolerate any degree of pressure more than was necessary to ascertain its actual state. The womb, as was said, was unusually large, and perfectly solid. At one spot pressure produced flinching. It

\* A neighbor was called in as the attendant left, who told me some time after that such was the saturation of the bedding and bed with blood, that it was deemed necessary to remove Mrs. — from her bed to the floor, that a fresh bed might be made for her. The quantity of blood was described as enormous.

was at this point, the midwife said the placenta had been attached. Stimulants were given, at once, and to relieve the alarming distress opium was added. While these measures were proceeding, means were used to check the hæmorrhage. A firm bandage was applied round the abdomen. The tampon was used, as was ice, and a strap from the bandage was passed between the limbs, and drawn strongly over a compress applied to the external organs.

Much relief of the stomach and lungs followed the opiate, which was repeated as indicated. The relief was expressed after a manner not to allow any question of its reality; and when resorted to afterwards, was alike salutary. I had in view what Stuart says in his monograph, printed some time ago, of the beneficial uses of opium in uncomplicated uterine hæmorrhage, though I did not give it in as full doses as does he. At times he gave as many as 80 drops at a dose, and repeated it if necessary, and never with any ill effects. My friend Dr. Bartlett, of New Bedford, in a conversation on the medicinal properties of opium, said he had found a combination of the bicarbonate of soda with it very useful in preventing some of the uncomfortable effects of this narcotic. Among these he mentioned headache, nausea, &c. I have frequently used this combination, and did so in the case of Mrs. —. The hæmorrhage—or leak, which it had become—was at length checked. Of this, Mrs. — was soon aware. Every physician must have observed how sensitive women sometimes are about the passage of blood over the limbs in these cases. It is its comparative warmth, probably, which makes them aware of this. This sensitiveness is sometimes met with in a degree to disturb the physician who is not aware of its power, for a very few drops will lead to the words, "I am flowing"—words most unmusical to the medical ear. Mrs. — was not disturbed by this occurrence. I told her that the ice would melt, and the warm water produced might imitate flowing. She did not refer to this occurrence I think more than twice during the many hours I remained with her.

The pulse continued to be uncertain. Sometimes it was to be felt in both wrists, but always with most distinctness in the right wrist. It was often wanting in the left, sometimes in the right. It was never *frequent*. This I deemed a very promising fact in its pathological bearings. The heart was acting feebly under the loss of a large amount of its great and important stimulus; but it acted *regularly*, whenever it could be detected in the artery. Stimulants, especially brandy, were always followed by return of the pulse, and increase of its force. The stomach-sinking was also relieved. "That goes to the right spot," was the language which expressed the relief. At times a large quantity of wind was afterwards discharged from the stomach.

Sleep had, as we have said, been disturbed for four nights just preceding labor. When quiet came, as it did from opium, sleep

came with it. It was profound, with heavy snoring, and full puffing in expiration. These last attracted attention. Mr. — was applied to, and he said this kind of sleep was natural. At times they were so disturbing that sleep was broken to stop them. The soundness of the sleep to-night might be owing to the long-continued previous watchfulness. At midnight I retired, after having carefully instructed the night attendants as to their duties, and after directing them to call me if anything occurred concerning which my advice might be necessary.

25th. Between 6 and 7, I saw Mrs. —, and learned that the night had been comfortable. There had been no noticeable hæmorrhage, and sleep had been less labored. The pulse continued feeble, and at times disappeared, but some food or other stimulants brought it back as before. The bandage, compress, &c. were removed, and no evidence of recent hæmorrhage discovered. (Speaking of stimulants, a mixture of tincture of cinnamon and cinchona was given. A medical friend suggested this to me many years ago in such cases, and I have often usefully employed it since.) The womb was smaller, and less tender. There had been no urine recently, and a large quantity was drawn by the catheter, with the customary relief.

5, P.M. But little gain since morning, the pulse being still uncertain. Mrs. — said her nurses had given her less nourishment than she felt she needed. Stimulants were freely given, with much relief from the sinking feeling; and directions as to quantities and times, as before, were insisted upon. It was clear that Mrs. — knew when she had enough, and was a better judge of this than were her attendants.

26th. Mrs. — not so well. Hæmorrhage returned at midnight, and continues. Pulse as before, at times felt, feeble, but still slow, about 75 per minute. Extremities cooler than before—manner of exhaustion. Stimulants—tampon and T bandage compression. Fluid extract of ergot every two hours, and two teaspoonsful of brandy every half hour till reaction. If uterine action, with bearing down, remove pressure from external organs. Mrs. — was seen twice in the forenoon, and again at 5 P.M. Fluid extract vomited, as have been all other ingesta. At this visit, more favorable report. Uterine action had occurred, and a cylindrical mass, several inches in length, and one inch in diameter, had been expelled. Its surface was light colored, mottled, smooth—very firm—requiring much force to cut through it, in direction of its length. Internal surfaces of the section black—uniform—exactly resembling blood which had been very forcibly compressed. It was at first thought to be the placenta, and was found to be so after a later examination. The factor of decomposition was strongly declared. Great relief had followed the expulsion of this mass. Hæmorrhage had ceased at once. The uterine tumor had nearly disappeared, and the abdominal walls were soft and flaccid. Strong eructation had followed the



three doses of the fluid extract, and with these the extract was thrown out of the stomach, as declared by its taste. I was called to see Mrs. — at midnight, as it was supposed she was dying. No signs of dying were present. She was restless—had not slept—and was as uncomfortable as she well could be. The solution of sulphas morphiae, which had been usefully exhibited before, was now given, and brandy and water as before, and she soon became calm. The solution was to be repeated as previously. Was called again at 6, A.M., the 27th, but found no cause for alarm.

27th, 5, P.M. Mrs. — is much as before in regard to pulse, but the day, upon the whole, had been a tolerably comfortable one. Liquids of all kinds, except cold water, were rejected, as in fact they have been during most of the disease, and in the same manner, by eructations. A strong desire was expressed for some kind of solid food, as it would produce less flatus than liquids, and in very small quantities would answer a better purpose. Bread was asked for, and the request granted.

28th. Called early. Mrs. — delirious all night, making violent efforts to spring out of bed.—No sleep, and no pulse. Lower limbs cold. Head hot. Easier than in the night. A teaspoonful of solution, with directions to repeat if necessary. Called again about noon. Lost sight; soon after I left, she calling for a lamp. Dozed, and then fell into a sound sleep, soon accompanied by stertor. Draws up right lower limb, and straightens it again in a perfectly natural manner. Carries right arm over the head, resting it on the back of it, a common position in health both when awake and asleep—then placing it along her side. Left side motionless. No pulse. Surface colder. She sunk gradually, and died without any convulsive or other movement.

A word of managing the afterbirth. Different rules. One—and Denman's, I believe—says wait an hour after the child's birth before interfering. Others recommend a less delay. I knew a physician, now dead, who never waited, but at once proceeded to deliver. If nothing occurs to demand interference, it is better to wait for uterine action, and to solicit action by pressure and friction over the uterine tumor. But contractions may occur, quite as severe as during labor, and the afterbirth does not advance. Examine the uterine tumor; especially ascertain if displacement exist—inversion, for instance, or hour-glass contraction. Examine per vaginam, to learn the state of the os uteri—following the guidance of the cord. If the placenta be still in the womb, and the cord seem to spring from its centre, then pass a finger to its nearest edge, and bring it gently down—when sufficiently advanced, draw alternately by it and the placenta, and if no morbid adhesion exist, it will soon advance and be delivered. I have seen a case in which much embarrassment was felt, as the placenta did not advance with such force as seemed sufficient and safe. In this, the above method was successfully adopted. Suppose the placenta be not within reach, wait, unless hæmor-

rhage occur. If this come on, or is present, pass the hand and learn what is the cause of delay. Hæmorrhage depending only upon separation, learn where this exists, and make further separation in its direction, if this can be done.

*Remarks.*—The placenta is occasionally retained in consequence of adhesions, which all safe efforts for separation and removal cannot or do not overcome. Sometimes it disappears—at least no portion of it is discerned, though carefully looked for. I have met with one such case. This patient did perfectly well, and afterwards had a child without accident. I saw, in consultation, a case of retained placenta between two and three weeks after the child was born. The womb was found as high as before labor, its fundus resting at the epigastrium. It was cylindrical in form. Examination found the lower end of the placenta protruding somewhat from the os uteri. I drew it slowly away. No hæmorrhage. In shape it was perfectly cylindrical, and more than twelve inches in length. It was grayish in color, or mottled, dark and white. It was not decomposed. Mrs. —, who was very ill, with the severest symptoms of metritis, and peritonitis, died a few days after my visit. Examination discovered an abscess in the uterine substance, in the fundus, and at its upper portion; and a perforation in its centre through which pus had passed into the peritoneal cavity.

I have seen another case of chronic placental adhesion, in which the uterine substance had given way, and upon examination after death a portion of the placenta was found protruding, and lying broadly upon the peritoneal surface of the fundus uteri. Mr. Murdock, of Edinburgh, published, several years ago, a report of a case of retained placenta, for his patient had twins. The placentas and membranes were retained six weeks, during the whole of which time a solution of alum was injected into the womb; not on account of hæmorrhage (for there was none), but to prevent decomposition. When the placentas came away they were found to be as perfectly preserved as in any other well-made preparation.

It is asked, "Why was not the placenta removed in Mrs. —'s case?" The question is pertinent. In answer, it may be said that it was stated the placenta had been removed by Miss or Mrs. —, the alleged midwife. It had been drawn away with violence, and intense suffering; and, as was added, because Miss or Mrs. had on hand another case of labor. What this violence in degree was, may be inferred from the small but long, very hard, cylindrical mass which was ultimately expelled from the womb. It was but a small portion of the placenta, and had evidently been left in the hurry, and the force used for the removal of the organ, by the pre-engaged attendant. Attempts for the forcible removal of what was not supposed to be in the womb, under the circumstances of the patient, were abandoned as wholly contra-indicated. Mrs. — was often so low, that the smallest increased annoyance must have been fatal. Clear reaction had in no sense occurred. The same constitutional

symptoms were always present, or improvement was too slight and too transient to be depended upon. Then the exquisite tenderness of the os uteri made manipulation not only dangerous but absolutely cruel. Mrs. — was bearing with so much heroism—patience—absence of complaint, her heavy load of disease and suffering, that to add to it in any way, was forbidden. Then the close contraction of the os uteri—its hardness, and the hardness of the cervix, added force to the conviction that mechanical interference could do nothing but injury. These are the facts in this case, which, to the writer, put interference out of the question.

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ON CATARACT.—No. III.

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THE most favorable case of remnants of the lens, is when the cortical substance forming its edge remains behind in the fold between the anterior and posterior capsule in the shape of a ring, more or less entire, and is shut off from the influence of the aqueous by the union of the relics of the anterior capsule with the posterior. There remains what has been observed after death in many who have been successfully operated on, and which has been described as "krystall wulst," and looked upon erroneously as reproduced lenticular substance. Less favorable is the case when the cortical substance forms a broader mass more or less extensive, and prevents, in some degree, the remnants of the capsule from withdrawing out of the region of the pupil, and presents a kind of secondary cataract. In these cases, generally, iritis follows, and in consequence union between the anterior capsule and the edge of the pupil, or even the entire closure of the pupil. Such uniting of the capsule to the edge of the pupil occurs very easily after extraction, often without any considerable symptoms of inflammation; consequently, it is very advisable, after taking off the bandage, to keep the pupil constantly, for from eight to fourteen days, somewhat dilated.

Although iritis involves the danger of partial or complete closure of the pupil, yet it may, by promoting the closing up of the opening in the capsule, preserve the eye from further swelling of the remnants of the lens and their deleterious consequences.

When larger pieces of lens have been left behind the iris opposite the corneal flap, or have been carried there by the aqueous flowing off from time to time, shortly after the operation, they may prevent permanent closure of the wound and union by first intention, and cause general inflammation with suppuration.

Generally, we hear only "suppuration of the cornea" spoken of. The process, however, needs a more careful examination. For in such cases it is not merely with suppuration of the cornea that we have to do; there is besides something else more important. It is not yet determined whether the destruction of the flap takes place

in consequence of deficient nutrition, or, what Arlt thinks more correct, because, owing to the bursting open of the corneal wound, there is developed irido-chorioiditis, with purulent exudation in the anterior chamber, and in the vitreous. Arlt has, for instance, observed that quite a similar condition of the cornea may occur also after simple puncturing of it, with iridectomy following.

When we observe early an eye in which this uncontrollable process has begun, it is not found that the corneal wound is open, and not even that the anterior chamber is obliterated, but purulent exudation lies at the periphery of the chamber, either merely behind the flap or also behind the other half of the cornea.

It has been established by various observations that when the pressure, either normal or increased, which the vessels of the eye sustain from the tension of the globe, is suddenly removed, irido-chorioiditis, with purulent exudation into the ocular cavities, may ensue.

It sometimes happens that the corneal flap becomes only cloudy and dull, while the other signs of irido-chorioiditis, with purulent exudation, are more pronounced, and finally give place to signs of the diminution of the size of the globe. Gradually, too, the cornea also shrinks, becomes smaller, clear, and wrinkled.

This saddest of all results may also be occasioned by other causes, especially by the bursting of the wound from external violence; but Arlt thinks that carefully tested observations justify the opinion that remnants of the lens of themselves are sometimes sufficient to account for it.

In many cases, the mass of exudation which unites the wound is merely distended by the increase of intraocular pressure from remnants of the lens, though generally the signs of slight iritis are also present. This distension may increase so as to form a somewhat cylindrical, hyaline, soft projection along the whole or a part of the wound.

Often the iris is pressed into the wound, after partial bursting of the latter; a prolapse of the iris is found, occupying more or less of the wound, and covered with the hyaline (cornea-like) mass, which at first served to unite the edges of the wound, but now sometimes increases abnormally, and causes the prolapse to appear farther forward than it really is.

Arlt has repeatedly, in cases of considerable prolapse, found remnants of lens after removing the summit; and in recent years two cases have occurred at the clinic, in which lenticular substance directly behind or near the prolapse was pressed forward and gradually cast off.

Generally, cases with prolapsed iris result favorably if left to themselves, and sufficient quiet is allowed to the mass covering the iris in order to contract, and so gradually to push back the iris. Only in case of constant irritation from friction against the edge of the lid, of persistent deep redness of the neighboring sclerotica, or

when the prolapse is so great that it appears narrower at the base, as if constricted, Arlt recommends removal or repeated puncturing. The bend of the cornea, which at first disturbs vision so much, gradually disappears without permanent bad effect. In general, the pupil, though drawn towards the wound, becomes remarkably clear, free from every trace of the cataract. Yet in cases of very great prolapse, the pupil easily gets quite closed; and then, when subsequently recourse is had to iridectomy, there is found stretched out behind the iris a turbid, more or less thick and rigid diaphragm, which entirely frustrates the effect of the iridectomy.

We have thus far considered those injurious consequences which may be induced by the swelling up of remnants of the lens. The question, however, occurs, whether injury may not accrue from them to the eye in some other way; for instance, from chemical or mere mechanical irritation of the iris and cornea. It must be granted that the lenticular substance may possibly react quite differently when out of the capsule from what it would when enclosed in the capsule. After the operation of discision, if small particles of the lens have passed through the pupil into the fold between the iris and cornea, partial redness of the neighboring part of the sclerotic with symptoms of general irritation (photophobia, lachrymation, often also pain) ensue, and do not cease till after the absorption of the piece of lens. Why should not the same thing take place also from remnants of lens after extraction?

In cases of over ripe cataracts, those in which the lens is wholly or partially broken down and changed into a milky fluid, Arlt has repeatedly noticed an unsuccessful result without finding other cause than that perhaps some of the milky fluid or of the globules suspended in it remained behind, and induced inflammation of the iris or of the iris and choroid. This supposition led him recently, after extraction of such a cataract, before putting on the bandage, to drop some tepid water between the lids. This case progressed very favorably. Further trials must decide it.

[To be continued.]

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REPORT OF THE COMMITTEE OF THE ROYAL MEDICAL AND  
CHIRURGICAL SOCIETY, ON THE SUBJECT OF  
SUSPENDED ANIMATION.

THE inquiry was conducted—

By means of experiments upon living animals;

By means of experiments upon the dead human body.

In investigating anew the subject of apnoea by means of experiments on the lower animals, it seemed expedient to observe, in the first place, the principal phenomena of apnoea in its least complicated form—namely, when produced by simply depriving the animal of air.

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The principal facts to which attention was directed during the progress of the apnœa thus induced were—

The duration of the respiratory movements;

The duration of the heart's action.

The duration of the heart's action was observed—

(a) In relation to the duration of the respiratory movements.

(b) In relation to the time after the stoppage of the breathing.

From the experiments performed it appeared that in the dog, the average duration of the respiratory movements after the animal has been deprived of air is 4 min. 5 sec., the extremes being 3 min. 30 sec. and 4 min. 40 sec. The average duration of the heart's action is 7 min. 11 sec., the extremes being 6 min. 40 sec. and 7 min. 45 seconds.

From these experiments it appears that on an average the heart's action continues for 3 min. 15 sec. after the animal has ceased to make respiratory efforts, the extremes being 2 min. and 4 min. respectively.

Rabbits on an average ceased to make respiratory efforts in 3 min. 25 sec. Their heart's action stopped in 7 min. 10 sec.; consequently the interval between the last respiratory effort and the cessation of the heart's action was 3 min. 45 sec.

The next question investigated was—the period after the simple deprivation of air at which recovery is possible, under natural circumstances, without the aid of any artificial means of resuscitation.

The experiments performed led to the conclusion that a dog may be deprived of air during 3 min. 50 sec., and afterwards recover without the aid of artificial means; that a dog is not likely to recover, if left to itself, after having been deprived of air during 4 min. 10 sec.

The force of the inspiratory efforts during apnœa was observed in the experiments to be so great that it was determined to measure them. They were found to be capable, in the dog, of raising a column of mercury four inches. It appeared, moreover, that their force increases up to a certain period.

In other experiments, plaster of Paris, and even mercury, were thus drawn upwards into the minute bronchial tubes.

It is easy to understand, therefore, how foreign bodies may be drawn into the lungs in cases of drowning, and the importance of this fact in the consideration of the pathology and treatment of apnœa.

The Committee next passed on to the subject of drowning.

The first question investigated was—For what period can an animal be submerged, and yet recover without the aid of artificial means?

It was found as the result of numerous experiments on dogs that, in striking contrast to the previous ones,  $1\frac{1}{2}$  minute's immersion in water suffices to destroy life.

Other experiments satisfactorily showed that the difference of

time between simple apnoea and that by drowning is not due to submersion, or to depression of temperature, or to struggling, but that it is connected with the fact, that in the one case a free passage of air out of the lungs, and of water into them, is permitted; in the other, the exit of air and the entrance of water are prevented.

There can be no doubt, from other considerations put forward, that although both these circumstances are concerned in producing the difference observed, yet that it is mainly due to the entrance of water and the effects thereby produced.

The treatment of apnoea was next considered.

For conclusions respecting artificial respiration, the Committee refer to the second portion of the Report.

Many other methods of resuscitation which have been recommended were employed, including actual cautery, venesection, cold splash, alternate application of hot and cold water, galvanism, puncture of the diaphragm.

Although some of the above means were occasionally of manifest advantage, no one was of such unequivocal efficacy in a sufficient number of cases as to warrant the Committee in specially recommending its adoption.

The experiments upon the dead subject were made with a view to determine the value of the various methods which have been employed for alternately compressing and expanding the cavity of the chest in such a manner as to imitate the natural movements of the thoracic walls in breathing. The following methods have been investigated:—

1. Pressure exerted by the hands on the anterior wall of the thorax, the body being in the prone posture. Such pressure has for its object, to expel a portion of the air contained in the chest; on relaxing the pressure, the chest expands and air enters.

2. The postural, or so-called "ready" method, described by Dr. Marshall Hall, consists essentially in "turning the body gently on the side and a little beyond, and then briskly on the face alternately;" and in making pressure along the back of the chest each time the body is brought into the prone position.

3. The method of Dr. Silvester, in which the action of the pectoral and other muscles passing from the shoulders to the parietes of the chest in deep inspiration is imitated. An inspiratory effort is produced by extending the arms upwards by the sides of the head; on restoring them to their original position by the side of the body, the expanded walls are allowed to resume their previous state, and expiration takes place, the quantity of air expelled being in proportion to that which had been previously inspired.

It being necessary to measure the flow of air in and out of the respiratory cavity under conditions of pressure closely resembling those which exist in natural respiration, no means of measurement could be used, which, in its working, would offer any appreciable resistance to the passage of air. With this consideration in view, an instrument designed by Dr. Sanderson was employed.



## GENERAL RESULTS.

1. As regards the volume of air which can be expelled from the thorax by compression of its walls, and inspired by the elastic expansion consequent on relaxation of the pressure, it was found—

(a) That pressure by both hands on the lower third of the sternum in the adult male subject usually displaced from 8 to 10 inches of air.

The pressure actually exerted amounted to about 30 lbs. It was, therefore, not greater than might be safely applied to the living subject. The volume of air expelled varied from 8 cubic inches to 15 cubic inches.

(b) That pressure made in the same manner on the upper part of the sternum usually displaced 2 or 3 cubic inches less than pressure on the lower part.

(c) That pressure exerted by one hand on the upper part, by the other on the lower part of the sternum, produced about the same results as were observed in *a*.

In this case the whole amount of pressure did not exceed that exerted in *a*.

(d) That the pressure of a weight laid on the lower third of the sternum produced similar results according to its amount.

(e) That lateral pressure exerted on the ribs or costal cartilages of both sides simultaneously was in no instance more effectual.

(f) That compression by a broad bandage encircling the chest, the ends of which were crossed over the sternum, and drawn in opposite directions by two persons, produced no greater effect than pressure with the hands on the sternum or sides.

2. As regards the whole amount of exchange of air produced by the method of Dr. Marshall Hall, "to imitate respiration," it varied much, according as the subject was favorable or the contrary; sometimes not exceeding a few cubic inches, but never exceeding 15 cubic inches.

3. As regards Dr. Silvester's method, it was found, that on extending the arms upwards, a volume of air was inspired into the chest, which varied, in different subjects, from 9 to 44 cubic inches, and it was observed that the results obtained in successful experiments on the same body were remarkably uniform, in which respect, as well as in their amount, they contrasted with those obtained by the method of Dr. M. Hall. On restoring the arms to the side, the quantity of air expelled was generally nearly equal to that previously inspired, occasionally less.

In the treatment of apnoea generally, the Committee offer the following suggestions:—

That all obstruction to the passage of air to and from the lungs be at once, so far as is practicable, removed;—that the mouth and nostrils, for example, be cleansed from all foreign matters or adhering mucus.

That in the absence of natural respiration, artificial respiration



by Dr. Silvester's plan be forthwith employed in the following manner:—The body being laid on its back (either on a flat surface, or, better, on a plane inclined a little from the feet upwards), a firm cushion or some similar support should be placed under the shoulders, the head being kept on a line with the trunk. The tongue should be drawn forward so as to project a little from the side of the mouth. Then the arms should be drawn upwards until they nearly meet above the head (the operator grasping them just above the elbows), and then at once lowered and replaced at the side. This should be immediately followed by moderate pressure with both hands upon the lower part of the sternum. This process is to be repeated twelve or fourteen times in the minute.

That if no natural respiratory efforts supervene, a dash of hot water (120° Fahr.) or cold water be employed, for the purpose of exciting respiratory efforts.

That the temperature of the body be maintained by friction, warm blankets, the warm bath, &c.

In the case of drowning, in addition to the foregoing suggestions, the following plan may be in the first instance practised:—Place the body with the face downwards, and hanging a little over the edge of a table, shutter, or board, raised to an angle of about thirty degrees, so that the head may be lower than the feet. Open the mouth and draw the tongue forward. Keep the body in this posture for a few seconds, or a little longer if fluid escapes. The escape of fluid may be assisted by pressing once or twice upon the back.

[Signed by the Committee of eight, C. J. B. WILLIAMS, Chairman.]

Dr. C. J. B. Williams said, that if the subject of suspended animation and its treatment appeared to be one of the greatest importance when the Committee were appointed for its investigation, the result of their labors did not make it less so; for during their researches several new points of both physiological and practical interest had arrested their attention. The Report just read contained a large mass of facts bearing on the subject, and these facts would be fully appreciated when they should be maturely considered; but the members of the Committee thought it might be acceptable to the Society if one of their body were to give a short summary of some of the most striking results. He (Dr. Williams) had been requested to do this since he entered the room, and not having been previously aware of the office which would devolve on him, he was not prepared to go fully into details; but he believed that he was sufficiently acquainted with the general results of the experiments to be enabled to give a summary of their most important features. He would premise that he could take no merit to himself with regard to the experiments which had been so ingeniously devised and laboriously carried on by other members of the Committee. He had been present at very few of the experiments themselves; but, as chairman of the Committee, had merely assisted in receiving and completing the reports from the sub-committees. The Committee, hav-

ing to consider the subject of "Suspended Animation," directed their inquiries to that kind of interference with life which results from stoppage of the breath in suffocation, strangulation, and drowning. The first series of experiments was to investigate the result of simple apnœa, or stoppage of the breath; and for this purpose the trachea of animals was opened, and a tube inserted so as to command the supply of air; and this tube being furnished with a stop-cock could be closed, and the results noted, especially these:—After the closure of the tube, 1, how long respiratory efforts continue; 2, how long the heart's action continues; 3, how long the heart beats after the breathing efforts cease. The experiments show a considerable variety of result; but, as a general average, it may be stated that in dogs efforts at breathing continued a few seconds more than four minutes after the closure of the tube; and the heart's action three minutes and a quarter longer. The duration and force of these respiratory efforts, in an animal deprived of air, were not more remarkable than important as indicating the period within which an animal deprived of air could recover; and this was found to be almost, but not quite, as long as the duration of these efforts—that is to say, a dog deprived of air four minutes only, would recover; but if the exclusion of air lasted ten seconds longer, he did not recover. The extraordinary force of these struggles for breath was shown by plunging the end of the tube into mercury; when it was found that the inspiratory effort sometimes raised a column of four inches of mercury, and, if the tube was shorter, would draw the quicksilver in considerable quantities into the bronchial tubes and air-cells of the lungs.

The next subject of investigation was suspended animation from drowning; and here the experimenters soon found a remarkable difference in the greater rapidity of the death, and the shorter time during which life is recoverable. An animal simply deprived of air for four minutes may recover; but one immersed in water for one minute and a half is irrecoverably dead. Recovery took place in several cases where the immersion lasted one minute and fifteen seconds; but fifteen seconds more made all the difference. The experimenters proceeded to search into the cause of this peculiarly destructive operation of drowning, as compared with simple privation of air; and very soon they were enabled to trace it to the action of the water itself, forcibly drawn into the lungs by the respiratory struggles of the animal. Two dogs were plunged into water, one having its trachea closed by a stop-cock at the moment of immersion. The dog with the trachea free was taken out in two minutes, irrecoverably dead. The other, with the trachea closed, was taken out at the end of four minutes; the trachea was opened, and in the course of a few seconds the animal began to gasp, and soon recovered. Another mode of diminishing the inspiratory struggles of the animal was by stupefying it with chloroform before immersion in water, and it was actually found that recovery took place

after two minutes and fifteen seconds' immersion. On this point he (Dr. Williams) adverted to a popular opinion, that it was more difficult to drown a drunken man than one who is sober, as having some foundation on this fact, that insensibility of any kind retards the fatal influence of drowning by diminishing those violent struggles for breath which, by forcing water into the lungs, soon put the case beyond recovery. But nothing so fully pointed out the extent and nature of the fatal influence of water in the lungs as the appearance of these organs in drowned animals as compared with those killed by simple apnoea. In the latter the air-passages remained free from all secretion or effusion, and the lungs themselves were light and buoyant, and contained remarkably little blood. Now this is contrary to what is generally described as the state of the lungs in asphyxia; and probably in ordinary cases, where death is not sudden, but prolonged, more or less engorgement may take place. But here there was no engorgement or obstruction, and it is not wonderful that animals would recover more readily. But with drowned animals not only were all the air-passages choked with frothy fluid, and that fluid generally more or less bloody, but the whole lungs were always highly engorged with blood, so that they were heavy, dark-colored, pitted on pressure, and on being cut, exuded an abundance of blood-tinged fluid with many air-bubbles in it. On this subject he would make two remarks on his own responsibility, apart from his office in the Committee. One was, How opposed these observations and conclusions are to those many years ago propounded by Goodwyn in his treatise on Suspended Animation, whose opinions have generally been adopted to the present time. Goodwyn concluded from his observations, that water never to a hurtful extent enters the lungs of the drowned, and he deprecated the popular practice of hanging up a drowned person by the heels to let the water run out. He (Dr. Williams) was by no means sure that, as Dr. Goodwyn was certainly wrong in his pathology, some modification of the popular practice may not be beneficial. The other remark related to the mode in which the water which got into the lungs of the drowned proved so rapidly and extensively injurious. No doubt much was due to its mechanical pressure on the tubes and cells, forming an impervious barrier to the readmission of air; but this would not account for the extraordinary increase of blood in the lung, and its transudation into the air-tubes. He believed the injurious influence of water to be due to its chemical power of acting by endosmosis on the blood within the capillaries of the lungs, swelling up and bursting the blood-corpuscles, and causing their rapid accumulation in the organ, and their extravasation into the bronchial tubes. This was a subject for further experimental investigation, and he thought it one of great importance, as bearing on the action of water as a noxious or a therapeutic agent. He would not detail the various means of resuscitation which were tried by the Committee, but the results of the trials were not such as to induce the Com-

mittee to recommend them strongly for general adoption. Various instructive experiments were made on different modes of performing artificial respiration, and the most conclusive of these had reference to the so-called "ready methods" of Dr. Marshall Hall and Dr. Silvester. One of their Committee (Dr. Sanderson) contrived the apparatus on the table for measuring the air which could be forced out of it into the lungs of a dead body by these methods of artificial respiration; and the general result was, that by Dr. Hall's method the quantity of air moved in and out of the lungs rarely reached nine cubic inches, and never exceeded fifteen; whereas by Dr. Silvester's plan an interchange of forty cubic inches was effected; and when this method was further improved by alternating the drawing up of the arms, with depressing them, and with pressure on the lower part of the sternum, the expelled air was as much as fifty cubic inches. So far, then, as these experiments go, they show a great superiority of Dr. Silvester's over Dr. Marshall Hall's "ready method."

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#### THE BOSTON MEDICAL AND SURGICAL JOURNAL.

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BOSTON: THURSDAY, SEPTEMBER 25, 1862.

THE following communication relates to a matter of such pressing importance, that we depart from the usual order of our JOURNAL to give it immediate publication. We trust that it may receive from the medical profession, and the community at large, that high consideration to which the source from which it proceeds entitles it.

At a meeting of the Boston Society for Medical Improvement, held Sept. 22, 1862, Dr. BOWDITCH remarked as follows:—

"I desire to bring before the Society a subject of great importance to the future welfare of our wounded soldiers; although, at first sight, it may not seem exactly appropriate for a meeting of this Society.

"During my recent visit to Washington with other physicians, summoned there by the Secretary of War, I was brought immediately in contact with the abominable system, or rather no system, of ambulances now in use in our army. The atrocities I saw committed, are, I think, a sufficient reason for bringing the subject before you, in order that, either by the individual effort of the members or by the united action of the Society, public opinion may be made so strong as to force the Government to devise some plan more in accordance with common humanity, and more truly military in its discipline.

"On the evening of Friday, Sept. 5, at the request of the Surgeon-General, I joined an ambulance train that was just starting to go to the relief of our starving and wounded men near Centreville. There was a train of fifty carriages. I subsequently learned that three of the drivers, afraid of entering the enemy's lines, escaped with their ambulance wagons, before we reached Long Bridge. This was easily accomplished, as there was no escort, and, as it subsequently appeared, no power to prevent such an event. It is true that an army surgeon accompanied and gave general direction to the train, but he was

on the first wagon, and could not know what was doing towards the end of the long train. I soon perceived that the drivers were men of the lowest character, evidently taken from the vilest purlicues of Washington, merely as common drivers, and for no other qualification. Their oaths were flaunted forth without the least regard to the presence of superiors, and with a profusion that was really remarkable even in the vicinity of Washington. The driver of my ambulance became sleepy as the night wore on, and as his zigzag course, over a Virginia road, was rather perilous, and as he informed me that he had been overturned a few weeks previously, I thought it more prudent to drive myself, rather than to allow him to do so. While the moon was up, this was comparatively easy. He accordingly slept *inside of the carriage* until 3 or 4, A. M. He then reluctantly again took the reins, because I was unwilling, owing to the darkness, to drive further. His whole deportment during the night showed a disregard for everything save his own comfort.

"Early in the forenoon, however, appeared on the part of the drivers of nearly one half the train a total want of discipline, and a forgetfulness of the object and character of our mission that seemed to me atrocious. Suddenly I perceived one half of the train was stopping, and all the drivers, leaving their carriages, rushed into an adjacent field, and there spent some minutes in stoning and shaking the trees in an apple and peach orchard; and all this in the presence of part of the family of a Virginia planter! These individuals made no resistance. They apparently thought it would be of no use, for over all this road had the two armies swept again and again. In vain I pleaded that we were breaking the sacredness of the flag of truce—that we richly deserved death for thus plundering private property. In vain I urged the inhumanity of leaving our suffering, starving soldiers, in order to fill their own greedy stomachs. I appealed to one of the three leaders who rode on horseback, and pretended to be the leader of the train. He only smiled a smile of ineffable contempt, and munched his stolen apple with perfect *nonchalance*. Meanwhile the flag of truce was lost afar off in the distance, and our party was obliged to drive for some time with great rapidity in order to overtake it. Just as my carriage started, a heavy stone struck it not very far from my head. It had evidently been hurled and *justly hurled* at us for our infamous conduct. I remarked that hereafter I should know why our ambulances were fired upon by the enemy. The only answer I obtained was an oath.

"About mid-day we arrived, and found our men in a most piteous condition, lying every where, inside and outside of every building connected with a small farm house. The negro quarters was a palace, the manure heap was a soft bed. The fairest place was under a wide-spreading tree. I found the drivers did not feel it to be their duty to help the sufferers, but sulked or swore or laughed, as it pleased each. On the following morning, it is true, I did persuade my own driver to bring to me water, as I was dressing the wounds of the soldiers, but it was difficult even to get that, and he aided me because I asked him to do so, and not because he had any heart in the work.

"On Saturday, P. M., we started for Washington—all the sick having been arranged in different ambulances under charge of various surgeons. That night I shall never forget. I had taken one of those most severely wounded under my own special charge. The ball had

passed into his chest and caused intense difficulty of breathing. He was a German, and one of the most uncomplaining of sufferers—and his broken words of gratitude for the slightest token of kindness were most touching. None but a brute could have failed to be kind to him. He could lie only on one side, and consequently his head was placed directly behind my driver. During the first part of the way I did not think that the driver paid the least attention to the road with reference to the comfort of the patient. In early night his tongue ran glibly on, in loud indifferent talk or the vilest profanity—thus preventing all sleep. As the night progressed, I was distressed to find that the whiskey with which he probably had supplied himself was having its usual soporific effect, and he fell back upon the panting form of my patient. I lifted him up, and told him I could not allow such treatment of the sick man. The only response I got was a muttered oath of “men complaining,” &c. But it was all in vain; again and again did he fall back, until at last I took the reins and drove most of the night with one hand, while with the other I supported this snoring drunkard!

“Of course, I repeated all these facts in a letter to the Surgeon-General. He assured me that I could not tell him anything new—that he had months since foretold to the Secretary of War the horrors that would occur with such a set of wretches, as usually were found in a body of ambulance drivers—that he had vainly endeavored to obtain *some system*, but there was none now. The whole of the ambulances are under the Quartermaster’s department. He (the Surgeon-General) had not the control of a single carriage. All his efforts had been in vain.

“I want now,” continued Dr. Bowditch, “through this Society, to create a public sentiment that will compel the Government to attend to this matter, and to have a real ambulance corps. Dr. Hammond (the Surgeon-General) is not wedded to any plan—but he has suggested the appointment of six ambulances to each regiment, and three men to each ambulance—viz., one driver and two assistants. The latter would take the wounded in a careful, methodical manner, from the field. This would prevent, in some measure, the soldiers from leaving their ranks, and would likewise be more humane for the wounded. All the corps would be under strict military discipline. But I repeat, all that is desired is that *some* plan be adopted. Now all is chaos. I make no motion on this matter, but leave these facts before the Society, hoping that they will, in some way, tend to relieve our suffering soldiers.”

Dr. J. MASON WARREN moved that Dr. Bowditch be requested to reduce his remarks to writing, and that the facts be laid before the public in the journals of the day.

Dr. H. W. WILLIAMS moved that Dr. Bowditch be a Committee to report some plan of address to the Secretary of War, to be sent by the Physicians of Massachusetts, in furtherance of some plan for the establishment of a United States Ambulance Corps.

FRANCIS MINOT, *Sec’y.*

S. L. ABBOT, *Chairman of Meeting.*

POLICE EXEMPTS FROM MILITARY DUTY.—ACTION OF THE BOARD OF ALDERMEN.—We notice that the Board of Aldermen have passed a resolution, that any policeman obtaining a certificate of exemption from enrolment for military duty is unfit for service in the police. We

cannot but regard this decision as hasty, unwise, and in many cases most unjust. We speak from positive knowledge when we say, that a policeman may in various ways be unfit for military duty, under the regulations of the United States service, and yet be every way competent to act in his civil capacity. For instance, a police officer may be wanting in a good set of teeth, he may have a hernia which is kept up by wearing a truss, or he may have varicose veins which he is able to support sufficiently well by means of a laced stocking, or he may have ankylosis or contraction, or mutilation of one or more of his fingers—and we might go on and enumerate many more slight defects, which are very serious objections to a man's entering the army, and yet do not at all interfere with a faithful performance of his duties in the service of the city. All such men, according to the action of the City Government, must be discarded or run the risk of being drafted and making incompetent soldiers. This is certainly wrong. Each case should be judged on its own merits. If a man fails in the performance of his duties by reason of bodily defects, by all means replace him with another more able, for we want none but competent public servants; but it is only a gratuitous act of cruelty to eject a faithful officer for no other reason than the general fact that he has obtained a certificate of exemption from military duty. It should be remembered that any disability from bodily infirmity which withdraws an officer from duty throws him upon his own resources; he does not become a public charge, as a disabled soldier does. We sincerely hope the City Government will recede from the position which it has, as we think, most unadvisedly taken.

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LUMBAR ABSCESS AGAIN.—*Mr. Editor*,—In writing the account of a lumbar abscess published in your issue of the 18th instant—last week, I desired to be brief. I am very sorry to find that by being so, I was exposing myself to such unpleasant criticisms.

I am not altogether unfamiliar with the diagnosis and the phenomena usually attending these abscesses, nor with the writings of Abernethy and other eminent authors in regard to them. I well know that the early opening in this case was not in accordance with their teachings, and for that reason was led to invite the attention of my professional brethren to the happy results attending and following it. I well know, too, that the symptoms in this case were somewhat unusually acute, but it did not occur to me that any one could call in question the propriety of calling so large an abscess, situated where that was, a "lumbar abscess," notwithstanding the well-known prevalent opinion among surgeons, of late years, that these abscesses are always connected with caries of some portion of the spinal column.

Whether in this case there was any actual caries, I have ever had much doubt, but have never doubted that if the pus had been allowed to work its own way to near the surface, the patient would have sunk with all the symptoms usually attending such cases, including the accustomed degeneration of the pus. I might here add, that, from some pains extending their way down into the internal iliac region, and other symptoms which the patient began to complain of, and from the great depth and the texture of the parietes over the tumor, I feel quite sure that the pus would have worked its way down along the psoas muscle if it had not been for the early opening.



Nor did it occur to me that in making a statement of facts to scientific men it was necessary to say *expressly* that the puncture was made over the central part of the tumor and directly towards its centre; nor that it was necessary to say *expressly* that the depth to which the instrument penetrated before reaching the pus was *not* left to the imagination at all, but was made a matter of the most careful measurement, and noted at the time. I will now add that I subsequently reassured myself of the correctness of my first measurement, by the careful introduction of a silver probe and other instruments. It could not have been more than one eighth of an inch less than three inches. I will also here state that on carefully introducing a silver probe, and after that a grooved director from my pocket case, I found them to enter *four and three fourths inches* before reaching the deepest—the most distal side of the sac; the diameter of the sac at this part being full one and three fourths inches.

It did not occur to me that a more particular description of the "small exploring trocar" used was called for. The instrument was "a long slender threadlike trocar (less than one sixteenth of an inch in diameter), with a wire stilet passing through it." Surely no one who has been accustomed to the use of this instrument, or has even read what Professor J. Y. Simpson (see Braithwaite, part 40, page 205) and other good authorities have said in reference to its use, would ever speak of the introducing of *such* an instrument into the "central" part of *such* a tumor as unwarrantably "plunging a trocar."

The occurrence of "constitutional" disturbance from so slow and gradual a discharge of matter from so deep an abscess and through so small an opening, was surely not to be expected.

I beg you will have the kindness to lay the above explanations and additional facts before your readers.

In conclusion, I would again ask—

1st. Have I probably seen the last of it?

2d. Did I reason and act wisely in opening it as early as I did, and in the *manner* I did?

Yours, &c. S. T.

Andover, Sept. 22, 1862.

#### VITAL STATISTICS OF BOSTON.

FOR THE WEEK ENDING SATURDAY, SEPTEMBER 20th, 1862.

##### DEATHS.

	Males.	Females.	Total.
Deaths during the week, . . . . .	47	39	86
Average Mortality of the corresponding weeks of the ten years, 1851-1861,	45.1	44.4	89.5
Average corrected to increased population, . . . . .	..	..	99.88
Deaths of persons above 90, . . . . .	..	0	0

##### Mortality from Prevailing Diseases.

Phthisis.	Chol. Inf.	Croup.	Scar. Fev.	Pneumonia.	Variola.	Dysentery.	Typ. Fev.	Diphtheria.
12	13	2	1	0	1	4	2	0

PAMPHLETS RECEIVED.—Medical Communications with the Proceedings of the Seventieth Annual Convention of the Connecticut Medical Society, held at Bridgeport May 28th and 29th, 1862.

DEATHS IN BOSTON for the week ending Saturday noon, September 20th, 86. Males, 47—Females, 39. Accidents, 2—apoplexy, 2—disease of the bowels, 1—inflammation of the bowels, 2—disease of the brain, 2—bronchitis, 1—cancer, 2—cholera infantum, 13—consumption, 12—convulsions, 4—croup, 2—diarrhoea, 3—dropsy, 1—dropsy of the brain, 2—dysentery, 4—scarlet fever, 1—typhoid fever, 2—haemorrhage, 2—disease of the heart, 2—infantile disease, 6—intemperance, 3—disease of the liver, 1—marasmus, 4—old age, 1—paralysis, 1—scalded, 1—smallpox, 1—teething, 2—unknown, 6.  
Under 5 years of age, 46—between 5 and 20 years, 3—between 20 and 40 years, 17—between 40 and 60 years, 12—above 60 years, 8. Born in the United States, 60—Ireland, 21—other places, 5.